

ABSTRACT

The present invention intends to provide a diamond-coated silicon to be used in an industrially applicable diamond electrode. A diamond-coated silicon comprising a silicon substrate having a thickness of 500 μm or less is coated at least partially with electrically conductive diamond. The silicon substrate having a thickness of 500 μm or less is manufactured by the plate-like crystal growth process, and then the silicon substrate is coated with the electrically conductive diamond by the chemical vapor deposition process to manufacture the diamond-coated silicon. The diamond-coated silicon is flexible and can be stuck to an electrically conductive support substrate, and thereby a large area electrode and a three-dimensional electrode structure can be readily obtained.